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receiving a signal output from the reader device; and

analyzing the signal output with a digital computer to indicate a property of the sample based on the confocal microscopy.

93. (Three times amended) A method of analyzing a sample in an integrated microfluidic device having at least three chambers in fluid communication, comprising:

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supplying the sample into a first chamber of the integrated microfluidic device, wherein the first chamber is selected from the group of chambers adapted to perform a preparative reaction, an analysis reaction, sample acquisition, DNA extraction, amplification, IV transcription or labeling;

performing a first reaction in the first chamber;

moving the sample to the second chamber, wherein the second chamber is selected from the group of chambers adapted to perform a preparative reaction, an analysis reaction including hybridization, sample acquisition, DNA extraction, amplification, IV transcription or labeling;

performing a second reaction in the second chamber, the second reaction being different from the first reaction;

moving the sample to the third chamber, wherein the third chamber is selected from the group of chambers adapted to perform a preparative reaction, an analysis reaction, sample acquisition, DNA extraction, amplification, IV transcription or labeling;

performing a third reaction in the third chamber, the third reaction being different from both the first and second reactions;

performing confocal microscopy on the hybridized sample by detecting an optical signal from the hybridized sample inside of the chamber using a reader device located outside of the chamber;

receiving a signal output from the reader device; and

analyzing the signal output with a digital computer to indicate a property of the sample.

Please add the following new claims:

--110. (New) The method of claim 80, wherein said microfluidic device includes a probe array immobilized on an internal surface and said performing confocal microscopy includes detecting the hybridized sample on the probe array.

111. (New) The method of claim 80, wherein the performing confocal microscopy includes performing scanning confocal microscopy.

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112. (New) The method of claim 110, wherein the internal surface forms a wall of one of said chambers and said wall includes at least partially transparent substrate having said probe array immobilized thereon.

113. (New) The method of claim 80, wherein said receiving of the sample in the second chamber includes using a fluid channel being about 20 μm to about 1000 μm wide.

114. (New) The method of claim 93, wherein said microfluidic device includes a probe array immobilized on an internal surface and said performing confocal microscopy includes detecting the hybridized sample on the probe array.

115. (New) The method of claim 93, wherein the performing confocal microscopy includes performing scanning confocal microscopy.

116. (New) The method of claim 114, wherein the internal surface forms a wall of one of said chambers and said wall includes at least partially transparent substrate having said probe array immobilized thereon.

117. (New) The method of claim 93, wherein said receiving of the sample in the second chamber includes using a fluid channel being about 20 μm to about 1000 μm wide.

118. (New) The method of claim 80, further includes using a fluid transport system connectable the reaction chambers and thereby forming said integrated microfluidic device.

119. (New) The method of claim 118, wherein the hybridization includes mixing the sample by moving the sample.

119. (New) The method of claim 118, wherein the hybridization includes creating sonic vibrations.

120. (New) The method of claim 80, further includes employing a valve located between two of said chambers.

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121. (New) The method of claim 93, further includes using a fluid transport system connectable the reaction chambers and thereby forming said integrated microfluidic device.

122. (New) The method of claim 121, wherein the hybridization includes mixing the sample by moving the sample.

123. (New) The method of claim 121, wherein the hybridization includes creating sonic vibrations.

124. (New) The method of claim 93, further includes employing a valve located between two of said chambers.--

Remarks

In the Office Action mailed November 6, 2001, the Examiner rejected claims 80 through 83, 85 through 96, and 98 through 107 under 35 U.S.C. §102(e) as anticipated by US Patent 5,587,128 to Wilding et al. or in the alternative as obvious under 35 U.S.C. §103(a) over US Patent 5,587,128 to Wilding et al. Applicants respectfully disagree with these rejections for the following reasons:

As claimed in claims 80, the present invention is a method of analyzing a sample in an integrated microfluidic device having at least two chambers in fluid